Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Notes on American Hepaticae

By Marshall A. Howe

I. Cephalozia connivens

Cephalozia connivens (Dicks.) Lindb. Proc. Linn. Soc. **13**: 190. 1872. Kritisk Gransk. Mossorna Dill. Hist. Musc. 38. 1883. Spruce, On Cephalozia, 46. 1882. Lindb. & Arn. Sv. Vet.-Akad. Handl. **23**^{5}: 20. 1889. Kaalaas, Nyt Mag. 165. 1893.

Jungermannia connivens Dicks. Fasc. Pl. Crypt. Brit. **4**: 19. *pl. 11. f. 15.* 1801.

Cephalozia multiflora Lindb. Act. Soc. Sci. Fenn. **10**: 501. 1875. Musc. Scand. 4. 1879.

This species has been much confused with its near relative *Cephalozia lunulaefolia* Dumort. (*C. media* Lindb., *C. multiflora* Spruce) both in Europe and America, but is very distinct as was first well pointed out by Spruce (*On Cephalozia*, 39. 1882). The plant may be readily distinguished from *C. lunulaefolia* by the large leaf-cells (35–90 μ, while only 25–50 μ in *C. lunulaefolia*), by the long-ciliate perianth-mouth, by the perianth-wall being unistratose throughout, and by being autoicous. The specimens distributed by Sullivant under the name of *Jungermannia connivens* in Musci Alleghanienses (no. 246) belong with *C. lunulaefolia* so far as we have been able to see them, and the same is true of no. 57 of Austin's Hepaticae Boreali-Americanae, issued as *Cephalozia connivens*. In 1896, Professor Underwood, in his review of "The Genus *Cephalozia* in North America" (Bull. Torrey Club, **23**: 381–394), placed *Cephalozia connivens* under "Species dubiae et inquirendae," remarking that it was likely to occur northward. In October, 1898, the writer of the present notes announced* at a meeting of the Torrey Botanical Club the discovery of the genuine *Cephalozia connivens* on the grounds of the New York Botanical Garden, supposing this to be the first collection of the real *C. connivens* in America. The species was soon found in several other places in the neighborhood of New York, and this has led to an examination of the specimens of *Cephalozia* in the accessible herbaria with the result that we are now able to cite seventeen North American specimens of the true *Cephalozia connivens*, showing a coastwise range from Prince Edward Island to Florida, and an extension inland as far as London, Ontario.

---

* Bull. Torrey Club, **26**: 24. 1899.

The specimens cited may be arranged as follows:

PRINCE EDWARD ISLAND: *J. Macoun*, June 27, 1888, no. 139 (a little only, mixed with *C. lunulaefolia* and *Kantia trichomanis*). ONTARIO: London, *J. Dearness* (in herb. Underwood, comm. in 1889 as no. 1). RHODE ISLAND: Providence, from Olney collection in Chapman herbarium; also, in same herbarium, a second specimen from Rhode Island, without locality. CONNECTICUT: on the ground in wet woods, Westville, *A. W. Evans*, November 29, 1890. NEW YORK: in a tamarack swamp, Syracuse, *L. M. Underwood*, April, 1888; Staten Island, *Mrs. E. G. Britton*, February 14, 1892; on the top of a decayed hemlock stump near Bronx River, New York Botanical Garden, *M. A. Howe*, September 21, 1898, with *Odontoschisma sphagni;* on bank of a stream in a boggy wood, Freeport, Long Island, *M. A. Howe*, October 17, 1898; on margin of a swamp, Richmond, Staten Island, *M. A. Howe*, October 23, 1898; Sayville, Long Island, *F. E. Lloyd*, March 5, 1899. DELAWARE: on ground in woods, Wilmington, *A. Commons*, March 12, 1890; in herb. Columbia University. NORTH CAROLINA: Salem, *Schweinitz*, in herb. Torrey (labelled *Jungermannia bicornis* by Schweinitz). SOUTH CAROLINA: Summerville, *C. G. Dubois*, April, 1889. FLORIDA: Lisbon, *L. M. Underwood*, January, 1891 (distributed from U. S. National Herbarium as no. 1217); Port Orange, *F. C. Straub*, February 23, 1895 (no. 207 in herb. Underwood)—also in same locality, March, 1895, mixed with *Telaranea* and a minute *Lepidozia* in Hepaticae Americanae, no. 180. BERMUDA: Devonshire Marsh, *M. A. Howe*, July 4, 1900.

Lindberg appears to have been the first to have combined the specific name *connivens* (Dicks.) with the generic name *Cephalozia*, although at the outset he attributed the binomial to Dumortier. Dumortier however persisted even in his "Hepaticae Europae" in keeping the species under *Blepharostoma* and seems never to have written *Cephalozia connivens*. The synonymy of the species is confused, owing partly to the fact that is was not until 1881 and 1882 that Lindberg and Spruce began to distinguish, in their published works at least, between the true *Cephalozia connivens* and *C. lunulaefolia*, and owing furthermore to some uncertainties attending the determination of *Jungermannia multiflora* of Hudson (Fl. Angl. 431. 1762). The question of interpreting correctly Hudson's *J. multiflora*, difficult at best, is needlessly complicated by Dr. Spruce (*l. c.* 40) by quoting the 1778 edition of Hudson's Flora Anglica, where a supposed synonym from Linné's Mantissa is introduced, though the original 1762 edition without the Linnaean synonym is all that needs to be considered. The original *Jungermannia multiflora* seems to have been founded wholly upon a plant described and figured by Dillenius (Hist. Musc. 481. *pl. 69. f. 4.* 1741). As noted already by Hooker, Spruce, and Lindberg, the figures given by Dillenius point strongly to *Cephalozia bicuspidata*. It is quite impossible to believe that they were drawn from specimens of *C. connivens* and Dillen's words "*per lentem vero perangusta*" in describing the leaves could not well apply to this species, yet Lindberg in 1875 (Act. Soc. Sci. Fenn. **10**: 501), after determining the specimen in the Dillenean herbarium bearing the corresponding name and number from the Historia Muscorum to be the *Jungermannia connivens** of Dickson, brought forward for this species Hudson's name *multiflora*. Finally,† however, interpreting this "Lichenastrum multiflorum exile foliis angustissimis" of Dillenius by the figure and description, Lindberg considers it a synonym of *Cephalozia bicuspidata* (L.) Dumort., which seems to us the most reasonable course in the matter. Lindberg at the same time most unwarrantably interprets *Jungermannia multiflora* Huds. in the light of additions made by Linnaeus nine years after its original publication and shifts the specific name *multiflora* to *Lepidozia setacea* (Web.) Mitt. It is clear that if *Jungermannia multiflora* Huds. (1762) can be justly treated as a synonym of *J. bicuspidata* L. (1753) it should always remain a "dead name."

---

* This determination, it may be noted, was made several years before the distinctions between the true *C. connivens* and *C. lunulaefolia* (*C. media* Lindb.) were recognized in print, at least, yet the statement that the Dillenian specimen is "*C. connivens* (Dicks.) Lindb.," was repeated by Lindberg in 1883, two years after his publication of *C. media*.

† Kritisk Gransk. Mossorna Dill. Hist. Musc. 38. 1883.

II. TELARANEA

TELARANEA Spruce, Trans. and Proc. Bot. Soc. [Edinb.] **15**: 365. 1885. [As a synonym.] Schiffn.; Engl. & Prantl, Nat. Pflanzenfam. **1**^{3}: 103. 1895.

The genus *Telaranea* has points of contact with *Lepidozia, Blepharostoma*, and *Arachniopsis*, and if generic rank is denied to it, might be incorporated with any one of the three with almost equal justice. To the *Micro-Lepidozia* section of the genus *Lepidozia* its affinity is perhaps especially close, yet, according to prevailing conceptions of genera among the Hepaticae, it seems a rather violent proceeding to include it in a generic group the historical type of which is *Jungermannia reptans* L. *Telaranea* diverges from *Lepidozia* in its delicate, filmy, conferva-like habit and in the division of the leaves very nearly or quite to the base, the segments being never more highly connate than through half the altitude of the basal cell and usually for a considerably less distance; the leaf-segments are capillary, of a single row of cells unless at the very base, the place of the basal cell being often occupied by a pair of cells side by side. From *Blepharostoma, Telaranea* is probably best distinguished by the disparity in size between leaves and underleaves and by the more pinnate branching. The archegonia, though usually borne on short postical branches as in *Lepidozia* and *Cephalozia*, are sometimes terminal on the main stem or lateral branches as in *Blepharostoma.*

In its filmy habit and delicacy of structure *Telaranea* is suggestive of *Arachniopsis* Spruce, but the latter genus represents a still further departure along the same lines from the *Lepidozia* type. In *Arachniopsis* the branches are all postical in origin, the underleaves are entirely wanting or are now and then to be recognized only in a most rudimentary form, and the leaves never have more than two segments which are wholly free at the base and consist of a single series of cells throughout.

The species and varieties to be arranged under the genus are, so far as we know them, as follows:

1. **Telaranea nematodes** (Gottsche)

Jungermannia nematodes Gottsche, Hepaticae Cubenses Wrightianae.

Cephalozia nematodes Aust. Bull. Torrey Club, **6** : 302. 1879.

Lepidozia chaetophylla Spruce, Trans. and Proc. Bot. Soc. [Edinb.] **15** : 365. 1885.

Lepidozia nematodes Spruce, *l. c.* 366.

Telaranea chaetophylla Spruce, "Mst. nov. gen." *l. c.* [as synonym]. Schiffn. ; Engl. & Prantl, Nat. Pflanzenfam. **1**^{3} : 103. 1895.

Lepidozia chaetophylla tenuis Pearson, Christ. Vid.-Selsk. Forhandl. 1886^3: 9. 1886. Evans, Bull. Torrey Club, **20** : 308. 1893.

Blepharostoma nematodes Underw. Bull. Torrey Club, **23** : 383 (footnote). 1896.

Spruce in comparing his *Lepidozia chaetophylla* with *Lepidozia nematodes* (Gottsche) emphasizes the flaccidity of the latter as a distinguishing character and this indeed appears to be about the only difference of importance to be detected between Wright's Cuban plant and those from South America distributed by Spruce as *Telaranea chaetophylla* (Hepaticae Spruceanae: Amazonicae et Andinae). Wright's specimens revive quite imperfectly on being soaked out with water, but there is such a range of variability in this respect in different parts of a single tuft and even of different parts of a single plant, both in the Cuban and South American specimens that we are not inclined to give much weight to this character. We therefore agree with our friend Mr. Pearson (*l. c.*) in believing that the two forms represent a single species. We would, however, differ from Pearson in retaining for this species the oldest published name *nematodes*. The specific name *nemoides* given earlier by Taylor to another plant now recognized as a *Lepidozia* seems sufficiently different both to the eye and ear to prevent confusion.*

In both the Cuban and South American plants the archegonia are usually borne on a short postical branch, rarely at the end of the main axis or of an elongated branch. In 1886, Pearson (*l. c.*) identified a specimen from Natal, South Africa, with Gottsche's Cuban species, which he renamed *Lepidozia chaetophylla tenuis*.

---

*The remark is attributed to Spruce (Pearson, *l. c.*) that *nemoides* and *nematodes* differ only in case-ending. It seems to us that the two words are equally nominative in form but that Taylor's name *nemoides* is an etymological monstrosity on account of his failure to use the true stem of the Greek noun in constructing the adjective.

Through the courtesy of Mr. Pearson we have been able to examine this South African plant, and like him, can find no reasonable grounds for distinguishing it from the American specimens alluded to. *Telaranea nematodes*, then, may be said to be found in a fairly typical condition in South America and South Africa as well as in Cuba, and to this range is now to be added Bermuda, where sterile plants were collected by the writer in Devonshire Marsh, July 4, 1900, growing in company with *Cephalozia connivens* and *C. divaricata.* In addition to this more or less typical form, illustrated by the specimens and descriptions cited, the species presents itself also in two forms which we think are sufficiently marked to receive varietal names. These are:

1a. **Telaranea nematodes Antillanum** (Besch. & Spruce)

Blepharostoma Antillanum Besch. & Spruce, Bull. Soc. Bot. France, **36**: clxxxiii. 1889.

Archegonia terminal on main stem, a lateral branch, or elongated postical branch, rarely on a short postical branch; leaves and perianth rather rigid.

Le Gommier, Gaudeloupe, *Ed. Marie.* In a specimen of the Guadeloupe plant kindly communicated by M. Bescherelle we find on a single individual all the various modes of bearing archegonia described above. The leaves, described by the authors as 4-parted, we find much more frequently 3- and 2-parted. It seems as impossible to separate this plant specifically from *Lepidozia chaetophylla* Spruce as it is to distinguish satisfactorily between the latter and Gottsche's *Jungermannia nematodes.* So far as we know, the identification of *Blepharostoma Antillanum* with *Jungermannia nematodes* was first made by Professor Schiffner (Engl. & Prantl, Nat. Pflanzenfam. **1**^{3}: 105. 1895).

1b. **Telaranea nematodes longifolia** var. nov.

Leaves more rigid than in type and more widely spaced, 0.4–0.8 (rarely 0.9 mm.) long, leaf-cells 2–4½ times as long as broad.

Collected by the writer on humus in a swampy wood in company with *Sphagnum*, *Pallavicinia Lyellii*, and *Cephalozia catenulata*, Freeport,* Long Island, New York, October 17, 1898

---

* This Freeport plant was listed by Dr. Smith Ely Jelliffe in his Flora of Long Island (48. 1899) under the name *Blepharostoma nematodes.*

(type specimen in herb. N. Y. Botanical Garden). Also, Florida, *John Donnell Smith*, 1877; *C. F. Austin*, March, 1878; *F. C. Straub*, March, 1895; Brunswick, Georgia, *C. F. Austin*, April, 1878.

The Long Island specimens agree essentially with those from Georgia and Florida, though the latter make a slightly closer approach to the Cuban plant. The Long Island station is therefore a noteworthy northward extension of the known range of a plant which has heretofore figured in papers on North American Hepaticae as coming only from a limited region of the South. The archegonia in these United States specimens, so far as we have observed, always occur on a short postical branch. The leaves are 5–8 cells long; the underleaves are 3- or 2-parted, their prongs of 2 or 3 cells each, incurved at the apices. All are autoicous. In the original *Jungermannia nematodes*, collected in Cuba by Wright, the leaves are 0.25–0.5 mm. long, 4–6 cells high, the cells being 2–3 times longer than broad.

The variety *longifolia* often gives the impression of being two or three times the size of the Cuban plant, but we have been unable to find any reliable structural characters to serve for a specific separation. The form of the perianth seems quite variable in all conditions of the species, but is often broader in the var. *longifolia* than in the type.

No. 180 Hep. Am., issued as *Blepharostoma nematodes*, is referable to *Telaranea nematodes longifolia;* it is mixed with *Cephalozia connivens* and with a minute *Lepidozia*, probably a reduced form of *L. setacea.*

Telaranea bicruris (Steph.)

Lepidozia bicruris Steph. Hedwigia, **24**: 166. *pl. 3*. 1885.

BRAZIL: São Francisco, *Ule*.

This plant, though a close relative of *T. nematodes*, seems entitled to specific distinction, differing in the almost invariably 2-parted leaves, in the frequent continuation of the stems into leafless flagella (rare in *T. nematodes*) and in the simpler ♀ bracts. It is described by Stephani as dioicous, though apparently he had not seen ♂ plants. We have been unsuccessful in attempts to find antheridia in the specimen kindly communicated by Herr Stephani, and it certainly may be suspected that dioicism is to be added to its distinguishing characters. All the perianths seen are on very short postical branches.

III. ARACHNIOPSIS

Arachniopsis diacantha (Mont.)

Jungermannia diacantha Mont. Ann. Sci. Nat. IV. **5**: 349. 1856.

Arachniopsis coactilis capillacea Spruce, On Cephalozia, 85. 1882; Trans. and Proc. Bot. Soc. [Edinb.] **15**: 356. 1885.

Leaves mostly rigid, composed of 4–6 cells, these 4–7 times as long as broad.

PERU: *Weddell, Spruce.*

Jungermannia diacantha Mont. is represented in the Montagne herbarium, now preserved in the Muséum d'Histoire Naturelle of Paris, only by two small sterile fragments fastened to pieces of mica. This original material, which we have seen through the courtesy of Mons. Hariot, agrees perfectly, so far as it goes, with the specimen from Mt. Campana, Peruvian Andes, distributed by Spruce as *Arachniopsis capillacea* in his "Hepaticae Spruceanae: Amazonicae et Andinae." Montagne's description of the leaves as "spiraliter 5/1 circa caulem dispositis" was evidently an error, due, it may be, to a torsion of the stem.

Arachniopsis confervifolia (Gottsche).

Jungermannia confervifolia Gottsche, Hepaticae Cubenses Wrightianae.

Cephalozia confervifolia Aust. Bull. Torrey Club, **6**: 302. 1879.

Arachniopsis coactilis Spruce, On Cephalozia, 85. 1882. Trans. and Proc. Bot. Soc. [Edinb.] **15**: 355. *pl. 13.* 1885. Excluding var. *capillacea.*

Leaves often flaccid, composed of 6–14 cells, these 2–3 times as long as broad.

CUBA: *Wright;* SOUTH AMERICA: on the tributaries of the Amazon, *Spruce.* We have little hesitancy in considering *Arachniopsis coactilis* Spruce a synonym of the Cuban *Jungermannia confervifolia* Gottsche. The latter is more flaccid, showing a relation to the South American specimens somewhat analogous to that described above as existing between *Jungermannia nematodes* Gottsche and *Lepidozia chaetophylla* Spruce. The Cuban plant is autoicous and in structural characters is essentially identical with the typical *A. coactilis.* Vestiges of underleaves are occasionally met with in both and in both the leaf is sometimes reduced to a single prong.

The specific separation of *Arachniopsis confervifolia* from *A. diacantha* is possibly open to question, yet in the light of available specimens the two appear distinct. *Arachniopsis coactilis filifolia* Spruce, judging from specimens distributed as *Arachniopsis filifolia* in Hepaticae Spruceanae, seems to us less entitled to specific rank.

Arachniopsis confervifolia resembles *Telaranea nematodes* in outward appearance, but is easily distinguished by the characters alluded to above under *Telaranea.* It is to be expected that *Arachniopsis* will be found to occur within the limits of the United States.

IV. RICCIA CAMPBELLIANA

Herr M. Heeg, of Vienna, has kindly called our attention (*in litt.*) to the close resemblance between the Californian *Riccia Campbelliana* M. A. Howe (Mem. Torrey Club, **7**: 26. *pl. 91. f. 1–15.* 1899) and the Mediterranean *Riccia macrocarpa* Levier (Bull. Soc. Bot. Ital. 1894: 114. 1894). The similarity is indeed very striking as is evident from specimens of *R. macrocarpa* which we owe to Dr. Levier, but *R. macrocarpa* appears to be uniformly dioicous as originally described by Levier and as described again by Stephani (Bull. Herb. Boiss. **6**: 343. 1898), while *R. Campbelliana* is uniformly monoicous; and the areolae of the outer face of the spores of *Riccia macrocarpa* are more perfect than in *R. Campbelliana.* In view of these differences the claim of *Riccia Campbelliana* to specific rank seems defensible for the present at least. The species has recently been collected by Dr. Walter R. Shaw at Claremont, Los Angeles County, Cal., thus extending its known range about two hundred and fifty miles southward.